FlyBy Math™ Alignment
New York SED Math Standards

Problem Solving Strand

Students will solve problems that arise in mathematics and in other contexts.

Standard	***FlyBy Math*™ Activities**
5.PS.7 Represent problem situations verbally, numerically, algebraically, and/or graphically	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
5.PS.8 Select an appropriate representation of a problem.	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Students will apply and adapt a variety of appropriate strategies to solve problems.

Standard	***FlyBy Math*™ Activities**
5.PS.10 Work in collaboration with others to solve problems	--Conduct a simulation of each airplane scenario.
5.PS.13 Model problems with pictures/diagrams or physical objects	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation. --Predict outcomes and explain results of mathematical models and experiments.

Students will monitor and reflect on the process of mathematical problem solving.

Standard	***FlyBy Math*™ Activities**
5.PS.16 Discuss with peers to understand a problem situation	--Compare predictions, calculations, and experimental evidence for several aircraft conflict problems.
5.PS.18 Determine the efficiency of different representations of a problem	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
5.PS.22 Discuss whether a solution is reasonable in the context of the original problem	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system.

Communication Strand	
Students will communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	
Standard	***FlyBy Math™* Activities**
5.CM.4 Share organized mathematical ideas through the manipulation of objects, numerical tables, drawings, pictures, charts, graphs, tables, diagrams, models, and symbols in written and verbal form	--Explain and justify solutions regarding the motion of two airplanes using the results of plotting points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

Connections Strand	
Students will understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	
Standard	***FlyBy Math™* Activities**
5.CN.4 Understand multiple representations and how they are related	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
5.CN.5 Model situations with objects and representations and be able to draw conclusions	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
Students will recognize and apply mathematics in contexts outside of mathematics.	
Standard	***FlyBy Math™* Activities**
5.CN.7 Apply mathematics to problem situations that develop outside of mathematics	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.
5.CN.8 Investigate the presence of mathematics in careers and areas of interest.	--Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

Representation Strand	
Students will create and use representations to organize, record, and communicate mathematical ideas.	
Standard	***FlyBy Math™* Activities**
5.R.1 Use physical objects, drawings, charts, tables, graphs, symbols, equations, or objects created using technology as representations	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
Students will select, apply, and translate among mathematical representations to solve problems.	
Standard	***FlyBy Math™* Activities**
5.R.5 Use representations to explore problem situations	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
5.R.6 Investigate relationships between different representations and their impact on a given problem	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
Students will use representations to model and interpret physical, social, and mathematical phenomena.	
Standard	***FlyBy Math™* Activities**
5.R.7 Use mathematics to show and understand physical phenomena (e.g., determine the perimeter of a bulletin board)	--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

Geometry Strand	
Students will apply coordinate geometry to analyze problem solving situations.	
Standard	***FlyBy Math™* Activities**
5.G.12 Identify and plot points in the first quadrant	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes and predict outcomes

Measurement Strand	
Students will use units to give meaning to measurements.	
Standard	***FlyBy Math™* Activities**
5.M.7 Calculate elapsed time in hours and minutes	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

Statistics and Probability Strand	
Students will collect, organize, display, and analyze data.	
Standard 5.S.1 Collect and record data from a variety of sources (e.g., newspapers, magazines, polls, charts, and surveys)	***FlyBy Math™* Activities** --Conduct simulation and measurement for several aircraft conflict problems.
Standard 5.S.2 Display data in a line graph to show an increase or decrease over time	***FlyBy MathTM Activities*** --Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes and predict outcomes.
Students will make predictions that are based upon data analysis.	
Standard 5.S.4 Formulate conclusions and make predictions from graphs	***FlyBy MathTM Activities*** --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.